United States Department of Agriculture

Marketing and Regulatory Programs

Animal and Plant Health Inspection Service

Proposed Rule for the Importation of Eucalyptus Wood Products from South America

Draft Environmental Assessment, October 2003

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I. Purpose and Need for Proposed Action

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) is proposing to amend the regulations for importing *Eucalyptus* wood products from South America (7 Code of Federal Regulations (CFR) § 319.40–5; § 319.40–6; § 319.40–7) by making more restrictive entry requirements for logs, lumber, and wood chips of tropical *Eucalyptus* species, and by adding an additional treatment alternative for importation of wood chips of temperate *Eucalyptus* species.

One of the proposed rule changes would require that debarked logs and lumber of tropical species of *Eucalyptus* from South America are fumigated or heat-treated prior to importation. Under current regulations, debarked logs and lumber of tropical *Eucalyptus* species may enter the United States following inspection at the port of entry, with no previous treatment required. Wood chips of tropical *Eucalyptus* species may currently enter the United States following inspection if they are from healthy, plantation-grown trees and are consigned to a facility operating under a compliance agreement. The USDA is proposing to require that these chips be fumigated with methyl bromide, heat treated, heat treated with moisture reduction, or treated with a surface pesticide prior to importation into the United States.

Wood chips from temperate species of *Eucalyptus* must be fumigated with methyl bromide, heat-treated, or heat-treated with moisture reduction prior to importation under current regulations. However, the USDA is proposing to modify the entry requirements to allow wood chips from temperate species of *Eucalyptus* to be treated with a surface pesticide as an alternative treatment. No changes in entry requirements are proposed for logs and lumber of temperate *Eucalyptus* species. These already require heat treatment or fumigation prior to entry in the United States.

The need for the proposed changes is as a result of a risk assessment conducted by the USDA Forest Service Wood Import Risk Assessment and Mitigation Evaluation Team (Kliejunas *et al.*, 2001). The risk assessment was prepared at the request of APHIS since APHIS received several requests from forest industries in the United States to import chips of *Eucalyptus* species from countries in South America. As a result of the risk assessment, eight groups of organisms that were associated with *Eucalyptus* in South America were rated with a high risk potential to the United States including purple moth

(*Sarsina violescens*), Scolytid bark and ambrosia beetles (*Scolytopsis brasiliensis*, *Xyleborus retusus*, *Xyleborus biconicus*, and other *Xyleborus* spp.) the carpenterworm (*Chilecomadia valdiviana*), round-headed borers (*Chydarteres striatus*, *Retrachyderes thoracicus*, *Trachyderes* spp., *Steirastoma breve*, *Stenodontes spinibarbis*), eucalyptus longhorned borers (*Phoracantha semipunctata*, *Phoracantha recurva*), pink disease (*Erythricium salmonicolor*), Ceratocystis canker (*Ceratocystis fimbriata*), and Botryosphaeria cankers (*Botryosphaeria dothidea*, *Botryosphaeria obtusa*, *Botryosphaeria ribis*). Because of the potential pest risks identified through the risk assessment process, pest mitigation (phytosanitary) measures have been proposed to prevent the introduction of non-native invasive forest pests.

In this document, PPQ analyzes the environmental effects of the proposed rule changes to 7 CFR part 319. This environmental assessment (EA) was prepared to comply with the National Environmental Policy Act (42 United States Code § 4321 *et seq.*) as prescribed in implementing regulations adopted by the Council on Environmental Quality (40 CFR §§1500–1508), by USDA (7 CFR part 1b), and by APHIS (7 CFR part 372), and to satisfy Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions."

II. Alternatives Including the Proposed Action

This environmental assessment analyzes potential environmental consequences of a proposal to amend the regulations governing importation of wood into the United States (7 CFR part 319). Two possible alternatives are considered in this environmental assessment – regulation under the proposed rule (preferred alternative) and the current regulation for the importation of *Eucalyptus* logs, lumber, and wood chips into the United States from South America (no action alternative).

A. No Action

The no action alternative would be to leave 7 CFR part 319 unchanged. Debarked logs and lumber of tropical *Eucalyptus* species may enter the United States following inspection at the port of entry under the existing rules. Wood chips of tropical *Eucalyptus* species may enter if the following conditions are met: the chips are documented to be from healthy, plantation trees from

tropical areas, free from rot at the time of importation, and consigned to a facility operating under a compliance agreement and treated within 30 days of arrival in the facility (7 CFR § 319.40–6). Wood chips from temperate species of *Eucalyptus* must be fumigated with methyl bromide, heat-treated, or heat-treated with moisture reduction prior to importation, in accordance with 7 CFR § 319.40–7. The no action alternative would leave these regulations unchanged.

B. Amend Regulations According to the Proposed Rule

This alternative would change 7 CFR part 319 according to the proposed rule and allow importation of debarked logs and lumber of tropical species of *Eucalyptus* from South America only if fumigated or heat-treated prior to importation, and would allow wood chips of tropical *Eucalyptus* species if fumigated with methyl bromide, heat treated, heat treated with moisture reduction, or treated with a surface pesticide prior to importation. This alternative would also amend the entry requirements for wood chips from temperate species of *Eucalyptus* by allowing treatment of chips with a surface pesticide as an additional treatment alternative. All treatments made under the proposed rule would be conducted in South America before the wood is shipped to the United States.

Heat treatment is designed to kill plant pests without destroying or appreciably devaluing an infested commodity. Heat treatment may employ steam, hot water, kiln drying, exposure to microwave energy, or any other method that raises the temperature of the center of each of the regulated article to at least 71.1 °C and maintains the regulated article at that center temperature for at least 75 minutes. Heat treatment with moisture reduction employs kiln drying, dry heat, exposure to microwave energy or any other method that raises the temperature of the center of each treated regulated article to at least 71.1 °C, maintains the regulated articles at that center temperature for at least 75 minutes, and reduces the moisture content of the regulated article to 20 percent or less as measured by an electrical conductivity meter. During the entire interval between treatment and export of heat-treated articles, the treated articles must be handled in a manner that prevents any infestation by plant pests.

Under the proposed rule, pesticides would be applied to the wood chips of temperate and tropical species of *Eucalyptus*. The surface pesticide treatment would consist of the following mixture: a fungicide containing 64.8 percent of the active ingredient didecyl dimethyl ammonium chloride and 7.6 percent of the

active ingredient 3-iodo-2-propynl butylcarbamate and an insecticide containing 44.9 percent of the active ingredient chlorpyrifos phosphorothioate. These pesticides have been approved by the Administrator of APHIS for use on *Eucalyptus* chips from South America and have been approved by the U.S. Environmental Protection Agency (EPA) for specific uses on wood articles. Any other pesticides that may be used must also be approved by the APHIS Administrator and be specifically labeled for use on wood articles by the EPA. The wood chips must be sprayed with the pesticide so that all the chips are exposed to the chemical on all sides. During the entire interval between treatment and export, the wood chips must be handled in a manner that prevents any infestation of the wood chips by plant pests.

Methyl bromide is a highly effective fumigant used to control insects, nematodes, weeds and pathogens in more than 100 crops, in forest and ornamental nurseries, and in wood products. Under the alternative to amend 7 CFR part 319, the potential for methyl bromide use increases because fumigation would be an option to treat logs, lumber, and small shipments of wood chips from *Eucalyptus* species of tropical origin. APHIS provides two methyl bromide fumigation schedules for wood products in the PPQ Treatment Manual (USDA, APHIS, 1998). Schedule T404 is a generic treatment for general insect control, and schedule T312 is a more rigorous treatment. Logs and lumber would be treated in accordance with schedule T-312 of the Treatment Manual (USDA, APHIS, 1998). Small samples of wood chips would be fumigated in accordance with schedule T-404 of the Treatment Manual (USDA, APHIS, 1998). In either of these schedules, the penetration of methyl bromide into wood is generally limited to the outer 4 inches.

III. Affected Environment

Eucalyptus species are members of the plant family Myrtaceae and are native to Australia, Philippines, Papua New Guinea, and Indonesia. There are no members of the Myrtaceae native to the continental United States although several species are native to Hawaii, Puerto Rico, and other U.S. territories. Species of *Eucalyptus*, *Leptospermum* and *Luma* (members of the Myrtaceae) have been introduced into the continental United States and have naturalized in certain areas. Numerous species of Myrtaceae, some of which are agricultural crops, have been introduced into Hawaii.

Five species of plants in the Myrtaceae family have been listed as endangered: *Calyptranthes thomasiana* (Puerto Rico, Virgin Islands), *Eugenia*

haematocarpa (Puerto Rico), *Eugenia koolauensis* (Hawaii), *Eugenia woodburyana* (Puerto Rico), and *Myrcia paganii* (Puerto Rico). One plant species is a candidate for listing: *Calyptranthes estremerae* (Puerto Rico). In the Northern Mariana Islands, the proposed threatened species *Pteropus mariannus mariannus (*Marianas fruit bat), includes plant species in the family Myrtaceae as an important part of its diet.

Eucalyptus species were first introduced into the continental United States in the mid-1800s. Much of the planting in the United States has been for ornamental and landscape purposes, especially in coastal areas of California and in southern Florida. However, some commercial plantations have been attempted in both States. Planting of *Eucalyptus* in Hawaii has expanded in recent years in anticipation of the chip market.

Eucalyptus is one of the primary tree species planted in many pulpwood-producing countries around the world where the climates are tropical. It is planted for its rapid growth and its potential for producing good fiber within 6 to 10 years in tropical regions where there is a year-round growing season. Brazil has the largest area of *Eucalyptus* plantations in the world, with three million hectares planted with various species (Flynn and Shield, 1999). The South American countries of Argentina, Chile, Peru, and Uruguay also have significant plantings.

The predominant use of *Eucalyptus* in the United States is in the floriculture trade. Plants are grown for their foliage, which is used in arts and crafts and by the floral industry. Another use of the plant material is for the production of *Eucalyptus* oils that are used in medicines, flavorings, and cosmetics. This market provides 2,000 to 3,000 tons per year worldwide; however, there is currently no production of these oils or production of *Eucalyptus* for these oils in the United States.

From the risk assessment conducted by the U.S. Forest Service (Kliejunas *et al.*, 2001), there are numerous potential pest organisms associated with *Eucalyptus* in South America that have a high likelihood of being inadvertently introduced into the United States on unprocessed logs or chips. Among the insects and pathogens found on *Eucalyptus* spp. in South America, eight groups of organisms were rated with a high risk potential to the United States. The purple moth (*Sarsina violescens*) is a polyphagous, defoliating pest in South America. Scolytid bark and ambrosia beetles (*Scolytopsis brasiliensis*, *Xyleborus retusus*, *Xyleborus biconicus*, and other *Xyleborus* spp.) have broad host ranges, a propensity for human-assisted movement, and could

potentially vector pathogens. The carpenterworm (*Chilecomadia valdiviana*) is an insect native to South America but has crossed over to *Eucalyptus nitens* and other exotic forest and fruit trees in Chile. The round-headed borers (*Chydarteres striatus, Retrachyderes thoracicus, Trachyderes* spp., *Steirastoma breve, Stenodontes spinibarbis*) are normally secondary associates of *Eucalyptus* in South America. Most of these beetles have a broad host range and may find suitable hosts in the warmer regions of the United States. The eucalyptus longhorned borers (*Phoracantha semipunctata, Phoracantha recurva*) are present in California but may be introduced into new areas. These insects are able to survive transport in wood and have broad host ranges. Pink disease (*Erythricium salmonicolor*) has a broad host range and causes a high level of damage under certain environmental conditions. Ceratocystis canker (*Ceratocystis fimbriata*) has demonstrated an ability to infect a wide range of hosts and cause considerable economic damage. Although this pathogen is currently widespread in the United States, concern arises due to potential for difference in pathogenicity and virulence of exotic strains or variants. Botryosphaeria cankers (*Botryosphaeria dothidea, Botryosphaeria obtusa, Botryosphaeria ribis*) are present in the United States, but the current uncertainty regarding the taxonomy of this group led to concerns about pathogenicity and virulence of exotic strains or variants.

IV. Environmental Impacts of the Proposed Action and Alternatives

Consequences of Pest Introduction

The consequences of pest introduction would be the same for both alternatives. Any introductions of pest organisms specific to *Eucalyptus* would have limited consequences since *Eucalyptus* occurs in only limited locations in the United States (Hawaii, California, and Florida). However, in California, *Eucalyptus* is one of the most important shade and ornamental trees, and the introduction of the eucalyptus longhorned borer (*Phoracantha semipunctata*) in 1985 has resulted in the death of numerous shade, ornamental, and windrow *Eucalyptus* trees as well as those used for pulpwood and fuelwood. Of greater concern are pests that are native to South America that have crossed over to *Eucalyptus*, since this characteristic suggests a wider host range and adaptability to new hosts (Kliejunas *et al.* 2001).

Many of the pests that were identified in the risk assessment (Kliejunas *et al.* 2001) with a high likelihood of introduction into the United States are more tropical in nature, and their ability to colonize hosts in much of the United States would be limited even if species other than *Eucalyptus* were attacked.

However, the risk assessment identified potential considerable consequence to Hawaii because of the State's more tropical nature and the extent of native species of Myrtaceae. Although not considered in the risk assessment, Puerto Rico and other U.S. territories may also be at considerable risk if tropical pests were introduced with shipments of *Eucalyptus* wood.

The risk assessment determined that eucalypt logs or chips destined for export from South America may be relatively free of most damaging organisms since commercial *Eucalyptus* plantations are well managed for maximum production, closely monitored to detect and control damaging pests, and grow under conditions that do not generally lead to a high incidence of damage by insects or pathogens. In addition, debarking and chipping adversely affect pest organisms because of actual destruction of living organisms or disruption of host material so that lifestages cannot be completed. However, fungi may or may not be affected by chipping. Few records of interceptions of quarantine organisms on imported *Eucalyptus* products were found in Europe and Asia (Kliejunas *et al.*, 2001).

The main difference between the two alternatives is the level of pest mitigation required. Although the risk assessment determined that *Eucalyptus* logs, lumber, and wood chips may be relatively free of most damaging organisms (Kliejunas *et al*. 2001), certain pests that may be imported with these products could result in significant economic and ecological consequences. The risk assessors concluded that for these organisms of concern, specific phytosanitary measures may be required to ensure the quarantine safety of proposed importations.

Phytosanitary Measures

A. No Action

Under the current regulations, debarked logs and lumber of tropical species of *Eucalyptus* from South America may enter the United States following inspection at the port of arrival. Findings of the pest risk assessment indicated several pests of tropical species of *Eucalyptus* for which visual inspection would not afford the appropriate level of protection to prevent pest introduction through imported *Eucalyptus* logs and lumber. Inspection is the process of visually and physically checking regulated articles at the port of first arrival for signs of obvious pest infestation. At the port of first arrival, the inspector reviews the import permit and confirms that all of the conditions of the permit have been met. The inspector then physically inspects the wood, although in the case of a large-volume shipment of logs, only a small percentage could be directly inspected. Any findings suggestive of infestation would prompt the

inspector to detain the shipment for the appropriate treatment of the wood. In the event that a treatment were ordered, the pest species would be positively identified and the treatment selected would be appropriate to eradicate the plant pest. Entry would be refused for cases of severe infestation. Inspection of large shipments could be complicated and extremely time-consuming, making thorough inspection impractical if not impossible. Inspection cannot be relied upon as a stand-alone component for excluding pest introduction and must be conducted in combination with other prescribed treatments.

Debarking, the process of removal of bark from logs and other regulated wood articles, eliminates or at least facilitates detection of plant pests and pathogens found on the surface of logs, as well as those found within and immediately beneath the bark. Debarking at origin could effectively remove egg masses or larvae of purple moth and carpenterworm on the bark. It would also be effective against Scolytid bark beetles (USDA, APHIS, 1991). Debarking also allows logs to be more thoroughly inspected at the port of first arrival for the presence of boring insects. Because it is virtually impossible to remove every scrap of bark, debarking is not effective as a stand-alone treatment. In addition, debarked logs may be reinfested by pests (*i.e.*, moth eggs) if not protected after debarking. Instead, it is better used to increase the efficacy of other mitigative actions, such as heat, fumigation, or pesticide application.

Under the no action alternative, wood chips from temperate species of *Eucalyptus* must be fumigated with methyl bromide, heat-treated or heat-treated with moisture reduction prior to importation, in accordance with 7 CFR § 319.40–5, § 319.40–6, and § 319.40–7. However, it has been determined that these treatments are ineffective as well as impractical to apply when used with large shipments of wood chips such as the volume of chips that could fill a ship's cargo hold. Facilities capable of heat-treating or reducing the moisture in large shipments of wood do not exist. Treating wood chips with methyl bromide can only be done effectively for a maximum sized wood chip pile of 120 cubic feet. Even if methodologies could be developed that allowed methyl bromide to penetrate throughout an entire wood shipment, such as the amount of wood chips filling a cargo hold, those treatments would require the use of very large quantities of methyl bromide. Increased use of methyl bromide may contribute to the depletion of the ozone layer.

If pests accompanying *Eucalyptus* shipments were to become established in the United States, an eradication program may be initiated, but discussion of indirect effects as a result of any program would be both speculative and premature at this time. However, without additional treatments of logs and

lumber as prescribed in the proposed rule, the likelihood of the introduction of a non-native plant pest with wood shipments is increased.

B. Amend Regulations According to the Proposed Rule

The proposed rule would allow importation of debarked logs and lumber of tropical species of *Eucalyptus* from South America only if fumigated or heat-treated prior to importation, and would allow wood chips of tropical *Eucalyptus* species if fumigated with methyl bromide, heat treated, heat treated with moisture reduction, or treated with a surface pesticide prior to importation. This alternative would also amend the entry requirements for wood chips from temperate species of *Eucalyptus* by allowing treatment of chips with a surface pesticide as an additional treatment alternative. All treatments made under the proposed rule would be conducted in South America before the wood is shipped to the United States.

Fumigation with methyl bromide has been used for many years to treat logs and lumber because of the chemical's high volatility, ability to penetrate most materials, and broad toxicity against a wide variety of pests (all stages of insects, mites, ticks, nematodes including cysts, snails, slugs, and fungi) (USDA, APHIS, 1991). The ability of methyl bromide to penetrate into wood has been a limitation of efficacy, although removal of bark facilitates the penetration of the fumigant into wood (Ricard *et al.*, 1968). Although methyl bromide may not be effective against all organisms, particularly those deep in the wood, Agency review of the efficacy of methyl bromide fumigations against pests and diseases in wood has been acceptable for two treatment schedules listed in the APHIS PPQ Treatment Manual (T-312 and T-404) (USDA, APHIS, 1998). This treatment would be effective for the purple moth since all stages of this insect would be on the surface of the imported wood. It would also be effective against Scoytid bark and ambrosia beetles (Hanula and Berisford, 1982), and for pests in wood such as round-headed borers, eucalyptus long horned borer, and carpenterworm (USDA, APHIS, 1991).

Heat treatment (to raise and maintain the internal temperature of the wood to 71.1 °C for a minimum of 75 minutes to kiln dry in accordance with the Dry Kiln Operators Manual (USDA, FS, 1991)) or heat treatment with moisture reduction (to reduce the moisture content of the regulated article to 20 percent or less) is effective against all pests, although killing efficacy is dependent on both temperature and humidity (USDA, APHIS, 1991). Kiln drying is effective for lumber (Ostaff and Shelds, 1978) but may be less effective for whole logs

(USDA, APHIS, 1991). There is a strong body of evidence supporting the efficacy of heat treatment as a means of reducing risk. For example, Johnston *et al.*, 1958; Jones, 1973; Tomminen and Nuorteva, 1992; Dwinell, 1995; Dwinell, 1997; and Morell, 1995 amongst others. After this treatment is applied, the wood must be segregated from all potential sources if pests to ensure that it is not reinfested. Heat treatment would be effective against purple moth since any stages of this insect would be on the surface of the wood. Kiln drying would be effective for Scolytid bark and ambrosia beetles (Ostaff and Cech, 1978), as would steam heat or hot water (APHIS, USDA, 1991). For pests in wood such as round-headed borers, eucalyptus long horned borers, and carpenterworm, kiln drying, steam heat or hot water would be effective (USDA, FS, 1991 and Ostaff and Cech, 1978).

The surface pesticide treatment applied to the wood chips of temperate and tropical species of *Eucalyptus* consists of the following mixture: a fungicide containing 64.8 percent of the active ingredient didecyl dimethyl ammonium chloride and 7.6 percent of the active ingredient 3-iodo-2-propynl butylcarbamate and an insecticide containing 44.9 percent of the active ingredient chlorpyrifos phosphorothioate. These chemicals are applied to chips as they are loaded for shipment. Morrell *et al*. (1998) list several advantages to the use of topical fungicides and insecticides over other mitigation methods for chip treatment: the spray can coat nearly the entire surface of the chip, the treatment solution can be easily adjusted to improve chip coating or biological efficacy, and the total amount of treatment per dry ton of chips can be readily monitored. Quality of treatment can be monitored by removing samples of chips for chemical analysis, not possible for heat or fumigation, since for those, no residual evidence of treatment (Morrell *et al.*, 1998). This treatment has proven effective for treatment of *Pinus radiata* wood chips against mold and sapstain, including *Alternaria alternata, Ophiostoma piceae, Phialophora* spp., *Aspergillus niger*, and *Trichoderma* spp. (Morrell *et al.* 1998).

Observations of ship holds containing *Pinus radiata* wood chips entering the United States in Washington indicate little evidence of insect activity (Russell, 1996). The effectiveness of the insecticide in the chip treatment, the minimal amount of bark, and the fragmentation of the wood probably all contribute to this result (Morell *et al*. 1998). Debarking and chipping adversely affect pest organisms, primarily insects, because of actual destruction of living organisms or disruption of host material so that lifestages cannot be completed (Kliejunas *et al.*, 2001).

Human Health Effects of Pesticide Treatment of Wood Chips

The proposed pesticide treatments of chips would be performed in South America before the chips are shipped to the United States. However, workers in the United States who could handle the imported wood chips, such as dock workers or mill operators, could be exposed to pesticide residues on the wood chips as the chips are unloaded and stored in the United States.

Treating wood chips with pesticides is not expected to result in an unacceptable exposure to workers handling the wood chips. The pesticides allowed for use under the proposed rule have all been registered with the EPA, which evaluates the pesticides for human safety. The EPA's evaluations indicate that the potential for these pesticides to have a negative impact on human health is minimal when used according to label instructions. In addition, pesticides would dissipate during the shipment time to the United States, thus reducing worker exposure to insecticide. Human exposure to pesticide residues would be further reduced by the requirement in the proposed rule that certain safeguards be applied upon arrival of the wood chips in the United States. During unloading, the chips must be on a covered conveyor and a procedure must be in place to retrieve any chips that fall. If transported, the chips must be covered or safeguarded in a manner that prevents the chips from spilling, falling, or being blown from the means of conveyance. At the receiving facility, the chips must be stored on a paved surface until processed. All wood chips and fines (chip pieces) or unusable chips must be processed or disposed of within 60 days of arrival at the facility.

Effects on Ozone Layer from Methyl Bromide

The fumigant methyl bromide is destructive to the ozone layer because it is a major source of bromine in the atmosphere and bromine is one of the most potent destroyers of ozone (Bell *et al.*, 1996). The destruction of ozone in the atmosphere allows increased amounts of ultraviolet (UV) radiation to get through the atmosphere to the Earth's surface. Increased levels of certain types of UV radiation can be damaging to terrestrial plants, animals and microbes. Methyl bromide was listed as an ozone-depleting substance under the Montreal Protocol. Except for exemptions for quarantine and pre-shipment and certain critical cases, methyl bromide use in developed countries must be phased out over the next few years with 100 percent reduction in 2005. APHIS anticipates no or nearly no importation of *Eucalyptus* logs and lumber from South America; only wood chips are likely to be imported. Therefore, any increases in methyl bromide use from the importation of *Eucalyptus* logs and lumber from South America would be negligible. In addition, no wood chips are expected to be fumigated with methyl bromide; rather, the proposed pesticide treatment option will be used. Therefore, no significant cumulative

impacts due to increased methyl bromide use will occur. In September 2002, APHIS completed an Environmental Impact Statement (EIS) concerning the importation of wood from Mexico (Rule for the Importation of Unmanufactured Wood Articles from Mexico, with Consideration for Cumulative Impact of Methyl Bromide Use, Final Environmental Impact Statement, September 2002). The Methyl Bromide Cumulative Effects Analysis chapter of the EIS discusses the environmental consequences of methyl bromide on the environment.

If pests accompanying *Eucalyptus* shipments were to establish, an eradication program would likely be initiated. Although eradication of any nonindigenous pest would require the use of pesticides, APHIS would prepare the necessary environmental documentation under NEPA and the Endangered Species Act (ESA) in advance of any eradication activities. Therefore, discussion of indirect effects at this time would be both speculative and premature. However, the additional treatments required by the proposed rule changes would reduce the risk for nonindigenous pests to enter the United States.

Other Environmental Statutes

Section 7 of the ESA and the ESA's implementing regulations require Federal agencies to consult with the U.S. Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. APHIS has considered the potential effects on endangered and threatened species and their habitats. The risk assessment prepared by the U.S. Forest Service found that the quarantine pest risks in the absence of mitigation pose impacts that may affect non target species. Current entry requirements allow importation of tropical species of *Eucalyptus* with debarking and inspection at the port of arrival. The treatments required in the proposed rule are the same as those required for importation of temperate *Eucalyptus* species and are more restrictive than current entry requirements for tropical *Eucalyptus* species. Therefore, PPQ has determined that amending 7 CFR 319 to amend the regulations for importing *Eucalyptus* wood products from South America will have no effect on endangered and threatened species.

Executive Order 12898, "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," focuses Federal attention on the environmental and human health conditions of minority and low-income communities and promotes community access to public information and public participation in matters relating to human health or the environment. The

executive order requires Federal agencies to conduct their programs, policies, and activities that substantially affect human health or the environment in a manner so as not to exclude persons and populations from participation in or benefitting from such programs. It also enforces existing statutes to prevent minority and low-income communities from being subjected to disproportionately high and adverse human health or environmental effects. Each alternative was analyzed in its ability to affect minority and low-income populations. Neither alternative was found to pose disproportionately high or adverse human health or environmental effects to any specific minority or low-income group.

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks," acknowledges that children may suffer disproportionately from environmental health and safety risks because of their developmental stage, greater metabolic activity levels, and behavior patterns, as compared to adults. The executive order (to the extent permitted by law and consistent with the agency's mission) requires each Federal agency to identify, assess, and address environmental health risks and safety risks that may disproportionately affect children. Neither alternative is expected to have disproportionately high or adverse human health or environmental effects to children.

V. Listing of Agencies and Persons Consulted

Environmental Services
Policy and Program Development
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Phytosanitary Issues Management
Import and Interstate Services
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
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VI. Literature Cited

Bell, C.H., N. Price and B. Chakrabarti [eds.]. 1996. The methyl bromide issue. Agrochemicals and Plant Protection. Vol. 1. John Wiley & Sons, West Sussex, England.

Dwinell, L.D. 1997. Pinewood nematode: Regulation and mitigation. Ann. Rev. Phytopath. 35:153–166.

Dwinell, L.D. 1995. Using heat to decontaminate unbarked Virginia pine logs. Proc. Ann. Meeting Forest Products Society, Portland, OR, June 1995.

Flynn, R., and Shield, E. 1999. Eucalyptus: progress in higher value utilization. a global review. Tacoma, WA and Annerley, Queensland: Robert Flynn & Associates and Economic Forestry Associates, 212 pp.

Hanula, J.L. and C.W. Berisford. 1982. Methyl bromide fumigation destroys broods of the smaller European elm bark beetle (Coleoptera: Scolytidae) in elm logs. J. Econ. Entomol. 75(4): 688–690.

Johnston, H.R., R.H. Smith, and R.A. George. 1958. Control of *Lyctus* powder-post beetles in lumber yards and processing plants. Pest Control. 26(1): 39–42 (abstract).

Jones, T.W. 1973. Killing the oak wilt fungus in logs. Forest Products J. 23:52–54.

Kliejunas, J.T., Tkacz, B.M., Burdsall, H.H., DeNitto, G.A., Eglitis, A., Haugen, D.A., and Wallner, W.E. 2001. Pest risk assessment of the importation into the United States of unprocessed *Eucalyptus* logs and chips from South America. Gen. Tech. Rep. FPL-GTR-124. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory, 134 p.

Morell, J.J., C.M. Freitag, and A. Silva. 1998. Protection of freshly cut radiata pine chips from fungal attack. Forest Prod. J. 48(2):57–59.

Morell, J.J. 1995. Importation of unprocessed logs into North America: a review of pest mitigation procedures and their efficacy. Forest Products J. 45:41–49.

Ostaff, D.P. and M.Y. Cech. 1978. Heat-sterilization of spruce-pine-fir lumber containing sawyer beetle larvae (Coleoptera: Cerambycidae), *Monochamus* sp. Rep. OPX200E. Canadian Forestry Service, Ottawa, ON, 9 pp.

Ostaff, D.P. and J.K. Shields. 1978. Reduction of losses to logs and lumber caused by wood-boring insects. Rep. OPX218E. Canadian Forestry Service, Eastern Forest Products Laboratory, Ottawa, ON, 15 pp.

Ricard, J.L., T.E. See, and W.B. Bollen. 1968. Control of incipient decay with gases in Douglas-fir poles. Forest Prod. J. 18(4):45–51.

Russell, K. 1996. How does Washington deal with inquiries and procedures for importing unmanufactured wood products? *In* Proc. Importing Wood Products: Pest Risk to Domestic Industries. Oregon State University, Corvallis, OR, pp. 138–140.

Tomminen, J. and M. Nuorteva. 1992. Pinewood nematode, *Bursphelenchus xylophilus*, in commercial sapwood and its control by kiln-heating. Scandinavian J. Forest Res. 7(1):113–120 (abstract).

USDA, APHIS — see U.S. Department of Agriculture, Animal and Plant Health Inspection Service

USDA, FS — see U.S. Department of Agriculture, Forest Service

U.S. Department of Agriculture, Animal and Plant Health Inspection Service. 1998. Plant Protection and Quarantine Treatment Manual, Interim Edition. PPQ04/98-01.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service. 1991. An efficacy review of control measures for potential pests of imported Soviet timber. Misc. Pub. 1496, September 1991. Riverdale, MD.

U.S. Department of Agriculture, Forest Service. 1991. Dry Kiln Operator's Manual. Forest Products Laboratory, Madison, WI. Agriculture Handbook 188. Revised August 1991.